1 Day Proficiency Improvement Program and Hands-on

Automotive Electronics & Embedded System

For Students from Automobile, Electronics and Instrumentation

ARAi (The Automotive Research Association of India)
Kothrud, Pune
on 29th July 2016

VelTech University
Avadi, Chennai
on 5th August 2016

Free Skill Development
This course will be useful to get admission into M-Tech (Automotive Electronics and Embedded Systems)
The legislative requirements for emission, fuel efficiency and functional safety are becoming critical driving factors for Electrification of a vehicle. Starting from no ECU (Mechanical systems), currently more than 70 ECUs are being deployed in the vehicle. Almost every subsystem will have electronic controls – powertrain, engine, hybrid transmission, chassis, brakes, steering, body lighting, windows, locks, etc. In future, active climate control, multi zone climate, instant heat/cool, infotainment, connecting the driver & passenger to any available information, multi-media and navigation will involve electronics. It has become essential for an Automotive or electronics engineer (desiring to work or) working in the automotive domain to know the basic construction & working of engine and system.

Students attending this course will get an insight to controls in modern automobiles & further interesting career in Automotive Electronics and embedded systems. This course will enhance chance of students to clear entrance exam & interview for M Tech Electronics Engineering (Automotive Electronics).

### BACKGROUND & OBJECTIVES

The legislative requirements for emission, fuel efficiency and functional safety are becoming critical driving factors for Electrification of a vehicle. Starting from no ECU (Mechanical systems), currently more than 70 ECUs are being deployed in the vehicle. Almost every subsystem will have electronic controls – powertrain, engine, hybrid transmission, chassis, brakes, steering, body lighting, windows, locks, etc. In future, active climate control, multi zone climate, instant heat/cool, infotainment, connecting the driver & passenger to any available information, multi-media and navigation will involve electronics. It has become essential for an Automotive or electronics engineer (desiring to work or) working in the automotive domain to know the basic construction & working of engine and system.

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### PROGRAMME

#### Day One

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09.00</td>
<td>Basics of electronics</td>
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<tr>
<td>10.00</td>
<td>Electronics in Automotive</td>
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<tr>
<td>11.00</td>
<td>Tea Break</td>
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<tr>
<td>11.15</td>
<td>Overview of Embedded System</td>
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<tr>
<td>13.00</td>
<td>Lunch</td>
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<td>14.00</td>
<td>Application in Automotive Electronics</td>
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<tr>
<td>15.30</td>
<td>Electric Vehicle, Hybrid Electric Vehicle and Fuel Cell Vehicles</td>
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<tr>
<td>17.00</td>
<td>Summary, Discussions and Feedback</td>
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**Note:** ARAI & VelTech reserve the rights to change the dates, schedule, contents, speakers, venue, etc. for the programme without any notice.

### INTENDED LEARNING OUTCOMES

On completion of the module, the delegates will:

- Understand the basic of electronics in general and automotive electronics in particular.
- Understand basics of embedded system.
- Understand the application of automotive domain.
- Understand the advent of electric mobility and recent trends in HEV & Fuel cells.

### SPEAKERS

**Dr. S. A. Patil:**
Dy. General Manager & Head, Learning Center, Academy, ARAI, Pune.

**Mr. M. T. Ingale:**
Dy. Manager, Learning Center, Academy, ARAI, Pune.

**Mrs. Sashikala:**
Professor Electronics, Vel Tech University, Chennai

ARAI, over five decades, has provided its design and development expertise to the automotive industry, focusing on the testing and evaluation of components and systems to meet national and international standards. In addition to utilizing state-of-the-art technology, laboratories and highly-trained personnel, ARAI recognizes the need to develop a new generation of engineers to meet the demands of the automotive industry, not just in India but across the globe.

ARAI ACADEMY conducts B.Tech, M.Tech & PhD courses in collaboration with various universities in India and abroad. Please visit [www.araiindia.com](http://www.araiindia.com) for more information.

Vel Tech University is a multi-disciplinary teaching and research institute located in the southern part of India near the Chennai city. Vel Tech University, “A Place to Progress and Prosper” and has fortified steadily over the and matured as Vel Tech University u/s 3 of UGC Act, 1956 in 2008 and recently in 2015 National Accreditation and Assessment Council (NAAC) an autonomous body funded by UGC accredited Vel Tech with A grade highest level of grading, with the clear vision “To create, translate and share frontiers of knowledge embedded with wisdom and innovation for a positive transformation of emerging society”.

**1 Day PIP and hands-on for students about Automotive Electronics & Embedded System**

on 29th July 2016 at Pune AND 5th August 2016 AT Chennai

### REGISTRATION FORM

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<th>Mobile No. &amp; Email ID :</th>
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